

SCHEME OF WORK

WEEK 1: PACKAGING OF AGRICULTURAL PRODUCE

1. Definition of packaging
2. Types of packaging materials e.g boxes, drums, trays, polythene bags, baskets, sacks, plastic container

WEEK 2: CRITERIA FOR SELECTING PACKAGING MATERIALS FOR AGRICULTURAL PRODUCE

1. Nature of produce (liquid or solid)
2. Shape of produce
3. Distance to the market from point of production
4. Live or frozen especially livestock produce

WEEK 3: PRICING OF AGRICULTURAL PRODUCE

1. Definition of pricing
2. Determinants of pricing of Agricultural produce; i. cost of production ii. Quality of produce, iii. Market forces (Demand & Supply) iv. Season of production.

WEEK 4: FARM RECORDS AND BOOK KEEPING

1. Definition of farm records and types of farm records e.g farm diary, farm inventory, farm inputs record, production record, sales record, profit and loss account

WEEK 5: FARM RECORD AND BOOK KEEPING CONTN'D

1. Consumption record, purchase record
2. Profit and loss account

WEEK 6: FOREST AND FOREST USES

1. Meaning of forest. Types of forest
2. Vegetation zones in Nigeria; i. mangrove, ii. Rain forest, iii. Deciduous forest

WEEK 7: USES OF FOREST

1. For; i. Food stuff, ii. Shelter, iii. Habitat for wildlife, iv. Recreation

WEEK 8: FOREST RESOURCES

1. Trees, wildlife (Animals), Fruits (food stuff)

2. Various food, Herbs, shelter.

WEEK 9: FOREST RESOURCES USES

1. Uses of forest resources

2. Effects of forest on the environment

3. Human activities that affect the forest; cleaning, bush burning, hunting

WEEK 10: REVISION

WEEK 11: EXAMINATION

TOPIC: PACKAGING OF AGRICULTURAL PRODUCE

Packaging means the act or process of wrapping, concealing or enclosing an agricultural produce with a suitable material in order to make the produce more attractive to consumers.

Examples of packaging materials include;

1. Box
2. Barrel
3. Basket
4. Crate
5. Cage
6. Plastic containers/bottles, jar
7. Glass containers/bottles, jar
8. Sack
9. Polythene film or bag
10. Aluminium foil
11. Ceramic containers e.g earthen pot or jar
12. Cartons
13. Tin/can
14. Trays
15. Bags e.g jute bag

Examples some agricultural produce that require packaging are;

1. Grain seeds eg rice, maize, guinea corn, wheat, barley, oat, rye, millet.
2. Legume seeds e.g Groundnut, soya beans, cashew nut, locust beans, beans, Bambara nut
3. Milk; powdered or liquid
4. Fish; Fresh, frozen, smoked or dry
5. Meat; Fresh, frozen, smoked or dry
6. Red palm oil, palm kernel oil, soyabean oil, olive oil, corn oil
7. Cassava flakes, cassava chip (in dry form)

8. Tomato
9. Fruit juice
10. Wine
11. Beer
12. Malt drink
13. Spices e.g pepper, ginger, garlic, thyme, curry, onions, turmeric
14. Cotton wool/sheep wool
15. Sugar
16. Bread
17. egg
18. Fruits e.g mango, pineapple, apple, cherry, berry, egg plant, cucumber, grape, oranges, pears, water melon, tangerine, lemon, pawpaw, banana, plantain.

Other examples of agricultural produce include cassava, carrot, Irish potato, sweet potato, raddish, cocoyam, cocoa, coffee, rubber latex, gum arabic.

Reasons for Packaging Agricultural Produce

Packaging of agricultural produce is done for several reasons and purposes which include:-

1. To preserve the produce for future use.
2. To protect the produce from undergoing spoilage.
3. To make the produce attractive to consumers.
4. To elongate the shelf-life of the produce.
5. To protect the produce from contamination.
6. To enable the consumers to know the manufacturing or packaging date and the expiry date of the produce.
7. To enable consumers determine if the produce so package has been registered with the relevant body e.g NAFDAC
8. To enable the consumers to know the location of the firm and the name of the firm that did the packaging.

ASSIGNMENT:

Briefly explain each of the eight reasons for packaging as listed above.

CRITERIA FOR SELECTING PACKAGING MATERIALS FOR AGRICULTURAL PRODUCE.

There are several criteria to be considered while selecting packaging materials for agricultural produce. Some of them include:-

1. Size of the individual unit of the agricultural produce.
2. Quantity of the agricultural produce.

It makes better sense that agricultural produce that are in large quantities are packaged in large size containers and moved over long distance for transportation instead of using small size containers.

3. Nature of the agricultural produce.

The peculiar natural characteristic features of the produce such as liquid or solid nature determine what package a given agricultural produce.

4. Shelf-life of the agricultural produce.

The length of time which the agricultural produce will last on the shelf should be put into consideration before selecting packaging material for it. For instance, the use of sack to package wheat flour instead of paper bag.

5. Perishable nature of the produce.

Some agricultural produce that are highly perishable such as fresh fruits, vegetables are supposed to be packaged using containers that allow free flow of air in and out of the container in order to keep the produce fresh and intact for consumption.

6. Distance to the market from point of production of the produce.

There is need to consider the distance to be covered while the produce is on transit from the point of production to the point of sale. This is necessary so as to prevent the incidence of produce loss and damage due to adverse weather condition.

7. Cost of the packaging material

It is wiser to use low cost packaging material in order to reduce production cost and increase profit margin.

8. Shape of the produce.

The natural shape of the agricultural produce should be considered when selecting packaging material for it. For instance, the use of egg crates to package eggs instead of polythene bags.

ASSIGNMENT:

1. Write short notes on the following criteria for selecting packaging materials for agricultural produce:-

1. Perishable nature of the produce
2. Distance to the market from point of production
3. Cost of packaging material
4. Shape of the produce

TOPIC: PRICING OF AGRICULTURAL PRODUCE

Definition: Pricing of agricultural produce refers to the determination of the monetary value of an agricultural produce which take place between the seller and the buyer of the produce.

There are some factors or determinants of pricing of agricultural produce. The determinants include:-

1. Size of the individual unit of the produce.

The price of an agricultural produce is affected by the physical size of the individual unit of the produce. Hence large size individual produce command higher price than small size individual unit of the same produce. For instance, bigger yam tuber has higher price than small sized yam tuber.

2. Quality of agricultural produce.

The quality of a given agricultural produce influences its price. Thus, higher quality agricultural produce attract higher price in the market compared to low quality agricultural produce. For instance, weevil infested maize grains attract lower price in the market than maize grains that are devoid of any pest infestation.

3. Cost of production of the agricultural produce.

The cost incurred while producing the agricultural produce influences its price in the market. For example, if a farmer spent so much money in rearing his goats on his farm, the price at which he will sell the goat will be high, so as to affect the cost of production of the goats.

4. Cost of transportation of the agricultural produce from the point of production to the point of sale.

The cost of transporting the produce from the point of production to the market location has to be built into its price. This is necessary in order to sustain continued production of the produce and sustain its supply in the market. For instance, if a trader bought 20 Rams from Bauchi and transported them to Abuja to sell, he has to set the price of each of the Ram in Abuja market taking into account the cost of transporting them from Bauchi, so that he will make certain profit from his venture.

5. Season of production of the produce

Prices of a particular agricultural produce is at the lowest during the peak of its harvest time while the price of the same produce rises steadily after the off-season of the produce. For instance, the price of yam is at the lowest during the peak harvest of yam in Nigeria, where as the price of yam rises sharply after its off-harvest season.

6. Market forces (i.e force of Demand and Supply)

The forces of demand and supply influences the price of a given agricultural produce in the market because when the demand for a particular agricultural produce is low, its price decreases in the market, but if the demand is high, the price will increase.

On the other hand, the higher the price of an agricultural produce in the market, the more of that particular produce that suppliers are willing to supply in the market and vice versa.

7. Quantity of the produce.

The more the quantity of a particular agricultural produce, the higher will be the price and the lower the quantity the less will be the price.

8. Agricultural produce with close substitute can have its price affected by the existence of the substitute. For instance, if the price of yam becomes too high in the market, customers tend to buy more of sweet potatoes and less of yam thus resulting in decrease in the price of yam because of low demand for yam.

ASSIGNMENT:

1. Write short notes on how each of the following determinants of pricing agricultural produce influences the price.

i. Quantity of the produce

ii. Season of production

iii. Market forces

iv. Close substitute to the produce.

TOPIC: FARM RECORDS AND BOOK KEEPING

Definition: Farm record refer to the documentation of important events and activities which have already taken place in a farm.

Factors that determine the types of record to keep:

Even though various forms of activities take place in a farm, the type of farm records to be kept depends on three important factors which include;

1. The size of the farm or how big is the farm: The bigger the farm size, and more transactions undertaken, the more number and complex the records to be kept.
2. Multiple units or enterprises of the farm: Ideally it is far better to have a separate unit on the farm. The less profitable unit can of course be easily replaced with the more profitable ones.
3. The degree of commercialization: The more commercial oriented or minded the farming business, the more detailed the records kept should be.

Types of Farm Records.

The main types of farm records which a serious minded farmer should keep and maintain are:

1. Farm Inventory Records:

This is the record which show the list of all material items in a farm. For instance, the total size of the farmland, number of tractors and other farm machineries, tools and equipment.

2. Farm Diary:

This record document and show the important day to day activities that take place in the farm. For instance, the number of eggs produced in the farm each day, the number of young animals delivered in a farm each day.

3. Production Record:

This is a record which shows the amount or quantity of produce that a farm has produce over a period of time e.g in a day, in a week or a month.

4. Consumption Record:

This record document and show the quantity of farm produce which the farmer had taken from his farm to his home and used for family consumption.

5. Sales Record:

This record shows the quantity of sales of produce made in a farm over a period of time e.g in a day, a week, a month.

6. Farm Input Record:

This record shows the quantity of farm input materials such as fertilizer, seeds, pesticides, herbicides, vaccines, and so on used in a farm over a time.

7. Purchases Record

8. Profit and Loss Account

PRINCIPLES OF FARM RECORD KEEPING

The four principles of farm record keeping include:-

1. Record kept have to be complete i.e it should include everything necessary.
2. It should be documented regularly and regularly kept i.e daily, weekly.
3. Record kept should be accurate and devoid of any falsehood or misrepresentation of facts.
4. Farm records kept and maintained should be checked or audited and cross-checked from time to time.

IMPORTANCE OF FARM RECORD KEEPING

The importance of farm record keeping can not be overstressed. This is because;

1. Farm record shows the kind of work being carried out on the farm.
2. Farm record enables the farmer to ascertain the yield of his crops and be able to compare them with those of previous years.
3. It enables the farmer to determine the amount of money or other resources spent on each unit of the farm.
4. It helps the farmer to compare his net income from the farm over the years so as to know if he is making profit or loss.
5. It helps the farmer to know if the factors of production such as land, labour, capital and entrepreneur have been efficiently combined and used.
6. It can be used by the farmer to facilitate his access to loans from banks or other financial institutions.
7. It is necessary to evaluate the right amount of tax to pay by the farmer.
8. It enables the farmer to plan his farm operations for the future.

9. It enables the farmer to compare his expenditure with his income.
10. It enables the farmer to make meaningful transfer of ownership at any time he so wishes.

ASSIGNMENT

Write a comprehensive note on the following;

1. Principles of farm record keeping.
2. Importance of farm record keeping.

TOPIC: FARM ACCOUNTS

Farm accounts are statement of monies paid or received for goods and services in farm business.

SALES RECORD.

This is yet another important type of farm record kept and used to document record of sales transactions in the farm. The record show the list of produce items sold out of the farm at any particular point in time. The list of the sold items is usually accompanied by date of sale of the item, unit price and total price in the case of multiple sale of the same produce item.

This record is particularly significant in calculating the profit and loss account of a farm.

PROFIT AND LOSS ACCOUNT

This is a more detailed form of income and expenditure statement. It shows the state of the business as well as the value of all the assets and liabilities at a given period of time.

For the purpose of calculating profit and loss account, it is necessary to value the farm at the beginning of the period in question. The value of items like equipment, farm buildings, farm structures e.t.c are assessed by assigning depreciation rate to them. The value of the stock in hand at the beginning of the period is included in the debit side of the account while the value of the stock in hand at the end of the period is considered credit.

Profit and Loss Account of Enoyi's Farm

	Expenses (Depit) ₦	Income (Credit) ₦
1	Buying of chemicals 3,000	Sales 4,000
2	Fertilizers 4,000	Produce 5,000
3	Miscellaneous 5,000	Stock taking 5,500
TOTAL	12,000	14,500
	14,500	
	12,000	
	2,500	

The above profit is Gross profit, in order to obtain Net profit, we need to subtract tax on such profit.

GROSS AND NET PROFIT

Gross profit is defined in simple way as the difference between the assets and liabilities of the farm within a specified period. But Net profit for a farm where the farmer is the manager will be the balance after the management cost been deducted from the gross profit.

ASSIGNMENT

Write short notes on the following types of farm record;

1. Profit and Loss account.
2. Sales account.

TOPIC: FOREST AND FOREST USES

Definition of Forest: A forest is a large expanse of land which is predominantly occupied by trees, shrubs, twines, lower plants, wild animals and other organisms.

Forestry is a branch of agriculture which deals with the study of forest, forest land and their resources.

TYPES OF FOREST VEGETATION ZONES IN NIGERIA.

There are several types of forest vegetation zones in Nigeria. They include;

1. Mangrove (Salt Water) Swamp Forest zone.
2. Fresh water forest zone or Deltaic swamp and moist lowland forest.
3. Savanna mosaic forest zone
4. Guinea savanna forest zone
5. Montane Savanna forest zone
6. Sudan savanna forest zone
7. Sahel savanna forest zone.

1. Coastal and Mangrove Forest: This zone is found along coastal creeks estuaries and lagoons. Different varieties of the red mangrove tree (*Rhizophora racemosa*) are common in this vegetation. However, in many areas, the coastal vegetation is now dominated by palm trees and lianas (climbing and twining plants).

2. Deltaic swamp and moist lowland forest: This is a fresh water swamp forest zone. It occurs extensively in the flood plains of large rivers. It consist largely of slender trees, raffia palms in areas that have been disturbed through farming activities. This zone is now restricted to a few forest reserves in Ondo, Bendel areas and in the Cross River basin along the Nigerian boarder with Cameroon. The high forest zone has been reduced to secondary forest due to man's activities. Secondary forest contain mainly oil palm. The high forest zone is now made up of evergreen water tolerant plants which are of three distinct types:-

(a). The Upper tree layer consists of very tall trees 40-50m high. These are scattered and do not form any continuous canopy.

(b). The middle tree layer is made up of trees usually from about 16-40m high. The trees are also scattered and like the upper layer tree layer, do not form a continuous canopy.

(c). The lower tree layer is made up of trees from about 10-16m high. The trees are closely packed, forming a continuous canopy.

3. Savanna Mosaic Forest Zone: The vegetation pattern of this zone is generally referred to as the "Derived Savanna". In this zone, rural population densities and farming activities such as shifting cultivation and annual bush burning have all contributed to the degrade of the original forest vegetation. The forest trees have now been replaced by fire-tolerant savanna species. In some areas, only a few forest trees and grass savanna remain.

4. Guinea Savanna forest zone: This is the largest vegetation zone in Nigeria. It covers the sparsely populated areas of the middle belt such as Benue, Nasarawa, Kogi, Kwara, Plateau, Niger, Kaduna, Taraba states.

5. Montane Forest Savanna Zone: This is the type of forest vegetation zone found around Jos, made up of leguminous wooded savanna plants spp. E.g Isoberlinaspp with Andropogon. This area has been affected by over-grazing, deforestation and fire. On the Mambilla plateau, grasslands occur above 14.50m on gentle slopes and forest communities are found along water courses and steep slopes.

6. Sudan Savanna Forest Zone: This zone consist of fairly closed savanna tree species and patches of grasses. The zone has a longer and more severe dry season than the Guinea zone. The relative humidity is low. The mean annual rainfall is generally less than 1016mm. The grass is short, feathery and gives continuous and cover, interspersed by short savanna trees such as Acacia spp. However, over-grazing and bush burning have seriously depleted the grass cover.

7. Sahel savanna forest zone: This is the most Nothern zone. It has less than 500mm of rain annually and the dry season may be up to nine months long in the year. The total vegetation cover is therefore small. The trees are widely dispersed and usually have small thorny leaves. The main vegetation layer is consists of low-growing shrubs, which in some parts, form a dense bush. In eastern Borno state, sorghum grass dominates the grass layer.

ASSIGNMENT

Write short notes on the following forest vegetation zones in Nigeria:-

1. Mosaic savanna forest zone.
2. Guinea savanna forest zone
3. Montane forest zone
4. Sudan savanna forest zone
5. Sahel savanna zone

USES OF FOREST FOR FOOD AND SHELTER

1. Forest provide several produce which are used as food for man and animals.
2. Forest provides fruits of assorted kind e.g mango, wild pears, cherry, berry.
3. Forest provide different seeds which are used as spices to add taste to our food e.g locust bean seed.
4. Forest provides proteinous seeds from trees that are legumes.
5. Forest provide trees whose leaves are used as vegetables by man.
6. Some trees in the forest produce flowers which are processed into beverage drinks e.g zobo drink.
7. The stem of some twinning plants growing in the forest are used to prepare draw soup e.g okoho stem.
8. The seeds obtained from the fruits of some forest trees are processed and used to prepare draw soup e.g ujuru seed and upi seed.
9. The seeds obtained from the pods of some forest trees are processed through fermentation and used as snacks e.g Akpaka and Ukwa.

Forest provides different materials which are used to construct shelter for human beings, for instance twig stems of forest trees and other stems of varying length and sizes are used to form the frame work of huts, bungalows, scar folds for high rise buildings under construction.

Planks gotten from timber wood of forest trees are used to construct floor decking of storey buildings.

USES OF FOREST AS HABITAT FOR WILDLIFE.

Forest provide natural habitat for wild animals such as apes, monkeys, orangutans, elephants, cheetah, deer, giraffe, zebra, lion, wolf, antelope, wild buck, hippopotamus, and reptiles like cobra, python, alligator, crocodile and so on.

It also serve as home for smaller wild life animals such as squirrels, grass cutters, African giant rats, bats, bush fowls, wood, peckers, snails, tortoise etc. Forest equally serves as home for pollinators like butterflies, bees, smaller birds and so on.

Forest serve as recreational spots and centres where people who are bored of the bustle and hustle of city and township life, once in a while move to the forest and spend some quiet time observing nature. Some usually spend their annual holidays in forest reserves that

have facilities for holiday resort like Obudu Cattle Ranch in Rivers State, and Yankari Game Reserve in Bauchi state.

ASSIGNMENT

Write a short but concise notes on uses of forest for;

- i. Habitat for wildlife
- ii. Recreational centers or spots.

TOPIC: FOREST RESOURCES.

Forest resources refer to the useful materials which are source from the forest and used to make human life comfortable.

Some examples of forest resources include;

1. Trees:

Trees forms the bulk of materials obtained from the forest. Wooden planks gotten from felled forest trees are processed and used to make furniture e.g bed, tables, chairs, wardrobe, shelves, settees, canoes, boats, lorry trails, wood of various sizes used for constructing roof frame works of houses, bridges, staircases in buildings, scar folds.

2. Wildlife Animals:

These are animals that can not be tamed by man. They range from Lions, Tigers, Wolf, Deer, Antelope, Orangutans, Chimpanzees, Apes, Monkeys, Elephant, Hippopotamus, Pythons, Cobras, and so on. Others include Alligator, Zebra, Giraffe, Crocodile etc. Some of them are captured and taken to the zoos and kept there for the public to visit and see. Others are hunted by government approved hunters who kill them and sell their flesh as bush meat to people who need them. Equally, skin obtained from some wild animals are used to make shoes, handbag, belt, sandals, and so on.

3. Fruits/other food stuff:

Various categories of edible fruits are sourced from trees that bear fruits in the forest. These are obtained and used as sources of food by man.

4. Herbs and Medicinal Plants:

Useful herbs which are deployed in curing various illnesses are obtained from the forest. They range from leaves, bark, seeds, fruits, roots or flowers of some forest plants and shrubs.

EFFECTS OF FOREST ON THE ENVIRONMENT

Forest has several effects on the environment. The effects include the following;

1. Forest helps to recycle nutrients.
2. It helps to purify the air in the atmosphere i.e it helps to balance the oxygen and carbon dioxide ratio in the atmosphere.
3. It helps to fast track the processes of soil formation.
4. It helps to conserve the soil since it prevents soil erosion caused by water, wind, snow or ice.

5. It helps to maintain the ozone layer and keep the earth's surface relatively cool and habitable for man and other animals.
6. It helps to create micro-climate in a given location where it is abundant.
7. It is a reservoir of a perfect ecosystem in nature.
8. It helps to conserve soil moisture.
9. It helps to avert the occurrence of desertification or desert encroachment in a given location.
10. It helps to beautify the environment.
11. It helps to maintain the water table and ensure availability of ground soil water in wells and boreholes.

ASSIGNMENT

Write a concise note on the effect of forest on the environment.

HUMAN ACTIVITIES THAT AFFECTS THE FOREST

There are several human activities that affects the forest. Some of them include;

1. Land cleaning for the purpose of farming:

Large hectares of forest land is cleared and opened up every year for the purpose of farming activities. As this action is performed, no effort is made to plant any tree that had been felled.

2. Deforestation for the purpose of estate construction, road construction, railway line construction, erection of pylons to transmit electricity from one location to another constiyute serious and negative impact on the forest.

3. Bush burning:

This is the deliberate or purposeful act of setting fire on cleared forest land for the purpose of getting rid of the stubbles. This act leads to the destruction of organic matter in the soil. The heat from the fire can also kill a lot of plant species.

4. Oil exploration or drilling:

The exploration or drilling of oil sometimes results in oil spillage. This can result in the destruction of forest fauna and floral.

5. Mining of minerals: The deep holes created at mining sites causes loss of a lot of forest land.

6. Construction of dams: Dam construction leads to loss of forest land.

ASSIGNMENT

Write short notes on the effects of human activities on forest.